

IN THE CLAIMS:

Please amend the claims as follows:

1. **(Currently Amended)** A method for producing a membrane-electrode structure, comprising the steps of:
 - applying a catalyst paste onto a sheet substrate, wherein the catalyst paste comprises an electron conducting material supporting a catalyst and an ion conducting material;
 - drying the catalyst paste to form an electrode catalyst layer;
 - thermally transferring said electrode catalyst layer onto each side of a polymer electrolyte membrane to form a laminated body, wherein said electrode catalyst layer is connected to each side of said polymer electrolyte membrane;
 - applying a first slurry onto a carbon substrate layer, wherein the first slurry comprises a water-repellent material and an electron conducting material;
 - drying the first slurry to form a water-repellent layer;
 - applying a second slurry onto said water repellent layer, wherein the second slurry comprises an electron conducting material and an ion conducting material;
 - drying the second slurry to form a hydrophilic layer, wherein a diffusion electrode consisting of said carbon substrate, said water-repellent layer and said hydrophilic layer is formed;
 - positioning said diffusion electrode on said electrode catalyst layer of said laminated body via said hydrophilic layer; and

pressing said laminated body and said diffusion electrode together under heating to integrate said laminated body and said diffusion electrode,

wherein said hydrophilic layer and said electrode catalyst layer are formed using a ratio of a weight of said ion conducting material contained in said electrode catalyst layer to a weight of said ion conducting material in said hydrophilic layer that is set within a range of 1.0 to 1.4.

2. **(Original)** The method for producing a membrane-electrode structure according to claim 1, wherein said second slurry comprises a pore-forming material.

3. **(Original)** The method for producing a membrane-electrode structure according to claim 1, wherein said catalyst paste comprises a pore-forming material.

4. **(Previously Presented)** The method for producing a membrane-electrode structure according to claim 1, wherein each of said catalyst paste and said second slurry comprises a pore-forming material, and wherein said hydrophilic layer and said electrode catalyst layer are formed using a ratio of a volume of pores with a pore size of 0.01 to 1 μ m formed in said electrode catalyst layer by said pore-forming material to a volume of pores with a pore size of 0.01 to 1 μ m formed in said hydrophilic layer by said pore-forming material that is less than 1.0.

Claim 5 **(Canceled)**

6. **(Previously Presented)** The method for producing a membrane-electrode structure according to claim 1, wherein said hydrophilic layer and said electrode catalyst layer are formed using a ratio of a weight of solid content in said electrode catalyst layer to a weight of solid content in said hydrophilic layer that is set within a range of 1.0 to 3.5.

7. **(Previously Presented)** The method for producing a membrane-electrode structure according to claim 1, wherein said hydrophilic layer has a maximum height surface roughness, R_{max_1} of 40 μm or less.

8. **(Previously Presented)** The method for producing a membrane-electrode structure according to claim 7, wherein said hydrophilic layer has a ratio of a surface area to a unit area that is 1.25 or less.

9. **(Previously Presented)** The method for producing a membrane-electrode structure according to claim 7, wherein a differential pressure between one side of said diffusion electrode and the other side is set within a range between 100 and 300 mmAq, when air is supplied at a flow rate of 0.5 L/cm²/min in a direction of a thickness of said diffusion electrode.

10. **(Previously Presented)** The method for producing a membrane-electrode structure according to claim 1, wherein said polymer electrolyte membrane is formed from a sulfonated polyarylene based polymer solution, and when said catalyst paste comprises catalyst particles consisting of a catalyst supported by carbon particles, an organic solvent solution containing a perfluoroalkylene sulfonic acid polymer, and a pore-forming material,

said electrode catalyst layer is dried wherein a content of the solvent becomes 20% or less by weight based on a total weight of said electrode catalyst layer, and the dried electrode catalyst layer is then thermally transferred onto and connected to said polymer electrolyte membrane.

11. **(Previously Presented)** The method for producing a membrane-electrode structure according to claim 10, wherein the dried electrode catalyst layer is thermally transferred onto and connected to said polymer electrolyte membrane under a pressure within a range of 1 to 5 MPa.

12. **(Previously Presented)** The method for producing a membrane-electrode structure according to claim 10, wherein said catalyst paste is applied on a surface of said sheet substrate having a contact angle to water of 55° to 105°.

13. **(Previously Presented)** The method for producing a membrane-electrode structure according to claim 10, wherein when said diffusion electrode is placed on each electrode catalyst layer and then pressed under heating, and wherein said diffusion electrode and said laminated body are pressured under an applied pressure set within a range of 0.5 to 4 MPa.

Claims 14-16 **(Cancelled)**.

17. **(Previously Presented)** The method for producing a membrane-electrode structure according to claim 1, wherein the membrane-electrode assembly is incorporated in a polymer electrolyte fuel cell.